

ABSTRACT OF THE DISCLOSURE

There are provided first and second optical waveguides formed on a semiconductor substrate and having upper clad layers and core layers that are separated mutually respectively, first and second phase modulation electrodes formed on the first and second optical waveguides respectively, and first and second slot-line electrodes formed on the semiconductor substrate on both sides of the first and second optical waveguides and connected to the first and second phase modulation electrodes via air-bridge wirings separately respectively.